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component, owing primarily to the higher available surface areas and pore volumes. In addition to being an improved ingredient for the fluidized catalytic cracking and hydrocracking of petroleum, the mesostructured transition aluminas of this invention also should be useful catalyst components for many other chemical conversions, including the hydrodesulfurization of petroleum, the steam reforming of hydrocarbons, ammonia synthesis, and many other heterogeneous catalytic processes.--

In the Claims

Replace Claims 1, 3, 4, 5, 6, 7 and 8 with the following Claims:

-1- (Amended)

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A mesostructured crystalline hydrated alumina composition selected from the group consisting of gamma alumina, boehmite, and mixtures thereof and exhibiting at least one low angle x-ray diffraction line corresponding to a lattice spacing of at least 2.0 nm and multiple wide angle x-ray diffraction lines with CuK α radiation wherein λ is 0.1541 nm corresponding to an ordered lattice comprised of oxygen atoms and hydroxide groups with aluminum in interstitial positions within the lattice, wherein the surface area is at least 200 m²/g; and wherein the pore volume is at least 0.40 cm³/g.

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-3- (Amended)

A mesostructured crystalline hydrated alumina and organic modifier composite composition wherein the alumina composition is selected from the group consisting of gamma alumina, boehmite, and mixtures thereof and exhibits at least one low angle x-ray diffraction line corresponding to a lattice spacing of at least 2.0 nm and multiple wide angle x-ray diffraction lines corresponding to an ordered lattice comprised of oxygen atoms and hydroxide groups with aluminum in interstitial positions within the lattice.

-4- (Amended)

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The composition of Claim 3 wherein the organic modifier component is a non-ionic surfactant.

-5- (Amended)

The composition of Claim 4 wherein the surfactant is selected from the group consisting of a polyethylene oxide block co-polymer, an alkylene amine; an alkylene polyamine, a polypropylene oxide amine, a polypropylene oxide polyamine and mixtures thereof.

-6- (Amended)

The composition of any one of Claims 3, 4 or 5 wherein the hydrated alumina component is boehmite.